

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
TECHNICAL SPECIFICATIONS FOR

TOWABLE MESSAGE BOARD - FULL-MATRIX, SOLAR POWERED

SERIES NO. 278-000
EQUIPMENT SPECIFICATION 278-000E

REV. 2/9/2021

General

These specifications describe the minimum requirements for a Full-Matrix Solar Powered Towable Changeable Message Board.

This equipment shall be new, a production model of current manufacture, and must meet all state and Federal safety standards in effect at time of delivery.

Any proposed value that is less than a minimum requirement will not be accepted. Any additions, deletions, or variations from the following specifications should be noted in the Bidder's Proposal. Any items appearing in the manufacturer's regular published specifications furnished by the Bidder are assumed to be included in the "Bidder's Proposal." Any additions, deletions or variations from the manufacturer's regular published specifications should be outlined in an attached letter.

Typical Specifications

A SMC 2000 FM ST with appropriate options, was used to develop these specifications.

Equipment of similar style, type, character, quality, features, and purpose conforming to the following detailed requirements/specifications will be considered. To that end and prior to award, the vendor must provide upon request any necessary manufacturer information (catalogue sheets, detailed specifications, pictures, etc.) for any of the exceptions taken on the bid proposal. This information will be evaluated to determine if the aforementioned exception(s) are equal.

These specifications used the standard options/features of the above listed items as the basis and minimum requirements for establishing equivalency.

Workmanship

Any unit delivered under this specification is subject to rejection if there is evidence of poor workmanship, by either the vendor or the original manufacturer. Any defect/nonconformity, so noted, may be corrected by the vendor to the satisfaction of the Equipment Engineer or his representative. All defect/nonconformity corrections must be completed before invoices can be processed for payment.

Vendor installation of any portion of equipment unit(s) should be stated in "Bidder's Proposal". Failure to note such installations can result in rejection of the unit(s) at the time of delivery.

Proposed item(s) must be from a manufacturer who has an authorized dealer(s) within the State of Louisiana with properly trained technicians plus all other resources necessary to perform warranty and repair services on this piece of equipment. All such service must be performed in complete accordance with the manufacturer's requirements. A letter certifying the ability to meet this requirement inclusive of the address(es) of the authorized dealer(s) should be supplied with submittal and may be required prior to award.

Vendor should attach to bid a listing of the Louisiana locations where parts and service can be obtained.

Operation

Unit(s) must have been test run by the vendor for proper operation of all features and capabilities of the make and model described in the successful bidder's proposal, and documentation for verification of the test(s) may be required prior to acceptance by DOTD.

Delivery

Unit(s) delivered to DOTD must be completely assembled (including but not limited to all components, accessories, etc.) and ready for operation. Unit(s) must be delivered "on the ground;" DOTD will not unload from any trucks, trailers, vans, etc. Note: LADOTD will have space available for successful bidder to unload.

Service & Inspection

All dealer pre-delivery inspection (PDI) must be completed prior to acceptance. All fluid levels are to be at full mark. Fuel tank(s) to be full. Any necessary lubrication performed etc. Unit must be completely assembled and ready for operation without any additional preparation.

Descriptive Literature

ONE (1) COPY OF DESCRIPTIVE PRODUCT ADVERTISEMENT-LITERATURE (BROCHURES) SHOULD BE FURNISHED WITH BID.

One (1) copy of the "Build Sheet" should be supplied with each unit. The build sheets should include all standard & optional features of the delivered unit. The build sheet should be in plain language not company specific item codes.

Miscellaneous

Vehicle shall comply with Louisiana state and federal emission requirements in effect at time of delivery.

EACH PIECE OF EQUIPMENT WILL BE ACCOMPANIED BY:

1. Certificate of Origin
2. A notarized Bill of Sale
3. Dealer's Service Policy
4. Owner's/Operator's Manual - one printed copy & one digital copy (CD, DVD, flash drive, or via e-mail)
5. Service Manual(s) - one printed copy & one digital copy (CD, DVD, flash drive, or via e-mail)
6. Wiring Diagram

7. Parts Manual
8. Trouble Shooting Guide

Invoices will not be processed for payment until the delivered unit passes inspection for specification compliance.

Louisiana Safety Inspection

Safety inspection shall be performed on each vehicle prior to delivery and a Louisiana safety inspection sticker properly affixed.

TIME OF DELIVERY MAY BE CONSIDERED IN DETERMINING SUCCESSFUL BIDDER

NOTICE TO BIDDERS

Bidder should complete every item described in detail in the "Specification Descriptions" section by either entering a check mark in the space provided to indicate the item being bid is exactly as specified or enter a written description to indicate any proposed item which will deviate from the specifications.

THIS SPECIFICATION SHOULD BE EXECUTED IN ACCORDANCE WITH THE ABOVE INSTRUCTIONS AND RETURNED ALONG WITH BID AND LITERATURE TO BE CONSIDERED FOR AN AWARD.

EQUIPMENT SPECIFICATIONS

Note: All Values listed below are minimums unless noted.

	SPECIFICATION DESCRIPTION	BIDDER'S PROPOSAL
TOWABLE CHANGEABLE MESSAGE BOARD		
TYPE	Full- Matrix Solar Message Center	
TRAILER & LIFT	<ul style="list-style-type: none"> • Frame shall be all welded structural steel • Tie-downs on each corner of the frame • Shall be coated with oven-baked, safety orange powder-coat finish • Single-axle, 3,500lb capacity • Adjustable height heavy duty hitches, <u>both pintle eye and 2" ball coupler provided</u> • Safety chains with hooks • Four (4) each: 2,000lbs. capacity, top-wind, swiveling, non-removable leveling jacks – One (1) mounted at each corner of the trailer • LED stop/turn/tail lights • Trailer must meet all State and Federal safety standards applicable at the time of delivery • Leak-resistant electro-hydraulic lift mechanism 	
ELECTRICAL SYSTEM	<ul style="list-style-type: none"> • Batteries are to be AGM deep-cycle type (not to exceed 70 lbs. per battery) with sufficient total capacity to operate the variable message sign for a minimum of 10 days without solar input. • On-board charger to provide the option of solar or AC charging. • 140w solar array • Electrical system shall be of adequate capacity/design to provide sufficient power to operate the message board continuously for one year at any location in Louisiana without any external inputs. • All electrical and electronic devices shall utilize DC input power only. No DC-to- AC voltage conversions are permissible. All devices must be temperature hardened, able to withstand at least 120F. • Electrical system to be equipped with all necessary instrumentation, controls, and diagnostics. The following minimum real time diagnostic data as obtained from the sign shall be collected and displayed. 	

EQUIPMENT SPECIFICATIONS

Note: All Values listed below are minimums unless noted.

	<ul style="list-style-type: none"> ○ Sign ID and firmware version ○ Battery voltage and amperage ○ Solar voltage and amperage ○ Voltage warning ○ Temperature warning ○ Message error warning ○ Feedback of message displayed 	
SIGN	<ul style="list-style-type: none"> • 79.5" H x 133" W • Continuous, full-matrix design <ul style="list-style-type: none"> ○ Displays messages using text, graphic symbols or both ○ Graphic symbols displayed at 50" height ○ Text messages to be displayed using 18" tall characters with capability of larger heights. • Lamp – LED (minimum 4 per 2" pixel) • Any section of the sign face with failed LEDs must be replaceable with interchangeable modules. • Message flash rate: variable, from 0.5 to 10.0 seconds per frame. • Legibility/Color – Sign shall have a daytime legibility of 1000' and angularity (1/2 angle calculation) of 15 degrees as evidenced by NTPEP field performance evaluation results. Display to be amber in color. <ul style="list-style-type: none"> ○ Any product that has not been tested by NTPEP is unacceptable. <u>Bidder should provide support documentation with bid packet. Documentation must be provided before an award is made.</u> • View angles – <ul style="list-style-type: none"> ○ The sign shall rotate a complete 360 degrees atop the lift mechanism when fully elevated. ○ The sign can be locked into various viewing angles with a positive rotation lock. ○ In the transit position, the sign is rotated parallel to the direction of towing for minimum wind loading. • LED brightness is automatically adjusted to accommodate for prevailing ambient lighting conditions. • Construction – <ul style="list-style-type: none"> ○ Sign face must consist of a set of individually removable modules that are completely interchangeable with all other modules. 	

EQUIPMENT SPECIFICATIONS

Note: All Values listed below are minimums unless noted.

	<ul style="list-style-type: none"> ○ Modules must be permanently attached in such a fashion to provide both electrical contact and vibration isolation while being easily replaceable in the field with minimal tools. ○ The message section shall be in a weather tight housing with the front sign face covered with a polycarbonate hinged cover for ease of service. ○ Sun shields, non-glare coatings, etc. are utilized to maximize daytime visibility of messages. 	
CONTROL PANEL/COMPUTER	<ul style="list-style-type: none"> • NTCIP – compliant software/computer • LCD control console display • Menu-based structure, accessed with virtual buttons on the touchscreen display, provides access to all sign functions including programming messages • Capable of storing 100 user-created messages • Indicators for the following status conditions: <ul style="list-style-type: none"> ○ Message sign power is on ○ Solar charging system is charging batteries ○ System power shutdown occurred ○ Programmed schedule is active • The software shall utilize multi-tasking protocol to provide communications support while simultaneously allowing a local operator to input commands for local sign control. • In a default condition, the controller software automatically switches the trailer to a minimum power mode to preserve batteries 	
COMMUNICATION	<ul style="list-style-type: none"> • Each changeable message sign shall be configured and provided with all necessary hardware to allow future remote communication capabilities. • Modem shall be for operation in harsh environments and shall also have GPS capability with antenna. Vendor will provide modem only. 	
ELECTRICAL INTERFERENCE	Sign shall be unaffected by any RF interference.	